

EVALUATION OF PREEMERGENCE HERBICIDES ON DRY BEANS, 1998

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Abstract

Eight herbicide treatments were evaluated in a commercial pinto bean field near Prineville, OR. Most treatments were applied preemergence, however Eptam plus Frontier was applied postplant, preemergence, and a treatment of Frontier was applied postemergence following a commercial preemergence application of Sonalan (ethalfuralin) plus Eptam (EPTC). The two treatments providing the best control of field bindweed, redroot pigweed and lambsquarters were Micro-Tech (alachlor) plus Sonalan and Frontier (dimethenamid) following Sonalan plus Eptam.

Introduction

Dry beans were grown commercially in central Oregon in 1998 for the first time in recent years. Pintos, reds, and pinks were grown on over 1,000 acres, with an average yield near 2,300 pounds per acre. The objective of this project was to evaluate several herbicide combinations applied preemergence to develop an effective weed control strategy for central Oregon in dry bean crops.

Methods and Materials

Eight herbicide treatments were evaluated in a commercial field of Agassiz pinto beans near Prineville with Ed Clark of UAP Pacific and Brian Barney, grower cooperators. Most preemergence herbicide applications were made June 17. However, Eptam plus Frontier was applied postplant, preemergence on June 22, and Frontier was applied postemergence July 7, following the commercial preemergence application of Sonalan plus Eptam on June 17. Treatments were applied with a CO₂ pressurized, hand-held boom sprayer at 40 psi and 20 gal/a water. Plots 20 ft x 30 ft were replicated three times in a randomized complete block design. Treatments applied June 17 were incorporated with a commercial disking operation shortly after application. Later applications were incorporated by sprinkler irrigation.

Plots were evaluated for stunting July 7 and July 22 and for weed control July 22 and August 18. Weeds evaluated July 22 were field bindweed, redroot pigweed and common lambsquarters. Overall weed control was evaluated August 18 for weeds that were able to push through the crop canopy.

Results and Discussion

Results of the herbicide applications are provided in Table 1. Micro-Tech plus Sonalan and Frontier applied postemergence over the top of Eptam plus Sonalan provided the best control across all evaluations, and these combinations were the only herbicides to provide

adequate control (97 percent) against field bindweed. All treatments were effective (98-100 percent) against redroot pigweed and common lambsquarters except Micro-Tech alone (80, 78 percent) or in combination with Eptam (93, 83 percent). Overall control evaluated August 18 was excellent for all treatments (98-100 percent) except Micro-Tech alone (85 percent), and in combination with Eptam (94 percent) or Treflan (96 percent). No stunting was observed due to treatments on any of the evaluation dates.

Table 1. Effect of herbicide applications on dry beans near Prineville, OR, 1998.

Treatment ²	Rate	Weed control ¹			
		Field bindweed	Redroot pigweed	Common lambsquarters	Overall control ³
	product/a		percent -----		
1. Micro-Tech	3.0 qt	38 ab ⁴	80 b	78 b	85 b
2. Micro-Tech	2.5 qt	72 a	93 a	83 b	94 a
+Eptam	1.0 qt				
3. Micro-Tech	2.5 qt	97 a	100 a	99 a	99 a
+Sonalan	1.5 qt				
4. Micro-Tech	2.5 qt	74 a	98 a	99 a	96 a
+Treflan	1.0 qt				
5. Eptam	2.5 pt	73 a	100 a	100 a	99 a
+Sonalan	4.0 pt				
6. Eptam	3.5 pt	88 a	100 a	100 a	99 a
+Sonalan	4.5 pt				
7. Eptam	1.5 pt	62 a	100 a	98 a	98 a
+Frontier ⁵	4.0 pt				
8. Frontier ⁶	1.5 pt	97 a	100 a	100 a	98 a
+Sonalan	2.5 pt				
+Eptam	4.0 pt				
9. Untreated		0 b	0 c	0 c	0 c

¹Visual evaluation was conducted on July 22, 1998.

²Treatments were applied on June 17, 1998 except for treatment 8.

³Visual evaluation was conducted on August 18, 1998.

⁴Mean separation with Student-Newman-Keuls (P<0.05).

⁵Treatment 7 was applied post plant/preemergence on June 22, 1998.

⁶Frontier was applied postemergence on July 7, 1998 following preemergence herbicides, Sonalan and Eptam, applied commercially.